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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,106

09/13/2005

Josef Bock

1435.121.101/12307US

6366

25281

7590

08/23/2006

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EXAMINER

CRANE, SARA W

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/521,106		BOCK ET AL.	
	Examiner		Art Unit	
	Sara W. Crane		2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 12-16 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 12-16, 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>26 June 2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 9, 12-13, 15-16, 24-26, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi in view of Kalnitsky et al.

See reason of record in the Office action of 16 March 2006, where the combination of teachings is discussed on page 3 of that action. With respect to claim 9, Higuchi region 3 is an emitter area, region 2 is a base area, and region 1 is a collector area. All three areas are contacted by electrodes, and the top electrode, for emitter and base includes a polysilicon layer (column 4, line 58). Polysilicon film 10 is implanted with boron (column 5, lines 1-9) with the range of boron concentration noted at lines 8-9 of column 5. Kalnitsky et al. teaches to insert carbon into a boron-doped polysilicon base electrode (column 3, lines 14-28). It would have been obvious to insert carbon into the base electrode of the Higuchi device for the reasons noted by Kalnitsky et al. A high density of vacancies would be inherent in the ion implant process, as noted previously. The boron concentration recited is within the range taught by Higuchi. It would have been obvious to add germanium to the polysilicon to tailor the band gap of the material, and to reduce resistance, for example. The boron-containing electrode of Higuchi is a base electrode. The transistor areas are all self-aligned to one another.

Claims 14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al.

As noted in the previous Office action, Oda et al. teaches specifically that polycrystalline silicon-germanium is known for electrodes.

Conclusion

Applicant argues with respect to the rejected claims that the Higuchi polysilicon layer is not an electrode. An electrode is a conducting material through which an electric current enters or leaves a material, or which applies a voltage to a material. The Higuchi polysilicon layer has such a function, so the claim language would be met. Moreover, one would rely on a specification of function to impart patentability only when the specified function necessarily gives rise to distinct structure. It does not appear to the examiner that the designation of function of "electrode" would give rise to structure distinct from that of the prior art, since Applicant's "electrode" is polysilicon as well. Applicant argues with respect to the Kalnitsky teaching that the 1% value refers to 1% of the dopant concentration. The reference states "the resulting carbon concentration in the polysilicon layer 20 is in the region of about 1%." A concentration *in the polysilicon layer* of 1% means that the concentration is 1% in the layer, not 1% of something that is not even mentioned, like dopant concentration.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

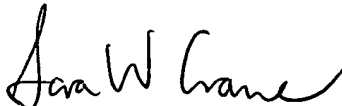
Art Unit: 2811

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (571) 272-1652.

The supervisor for Art Unit 2811, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sara W. Crane
Primary Examiner
Art Unit 2811